Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Improving 9-1-1 Reliability	)	PS Docket No. 13-75
	)	
Reliability and Continuity of Communications Networks, Including Broadband Technologies	)	PS Docket No. 11-60

Comments of Alaska Communications Systems

Alaska Communications Systems ("ACS")[1] hereby submits these comments in response to the Notice of Proposed Rulemaking ("Notice")[2] issued by the Commission in the above-captioned proceedings. In the wake of 9-1-1 outages affecting the Washington, D.C. area, the Notice seeks comment on whether possible Commission rule changes could improve 9-1-1 reliability, including four possible approaches to implementing recommendations offered by the Public Safety and Homeland Security Bureau ("Bureau") in its January 2013 Derecho Report.[3]

ACS agrees that reliable, robust 9-1-1 network facilities and services are critical elements of today's public safety response model. In Alaska, acute dangers can emerge suddenly and without warning. Powerful storms rivaling the derecho that struck the Midwest and mid-Atlantic states last June howl regularly through Anchorage and more remote parts of Alaska. Indeed, in September 2012, just a few months after the east coast derecho, two separate storms struck

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1 In these comments, "Alaska Communications Systems" signifies the incumbent local exchange carrier ("ILEC") subsidiaries of Alaska Communications Systems Group, Inc., which include ACS of Alaska, LLC, ACS of Anchorage, LLC, ACS of Fairbanks, LLC, and ACS of the Northland, LLC.

2 *Improving 9-1-1 Reliability*, PS Docket No. 13-75, Notice of Proposed Rulemaking, FCC 13-33 (rel. Mar. 20, 2013).

3 *Impact of the June 2012 Derecho on Communications Networks and Services: Report and Recommendations*, Pub. Safety and Homeland Sec. Bureau (rel. Jan. 10, 2013).

Anchorage, each delivering damaging winds in excess of 100 mph and flooding rain.[4] Climactic extremes, forbidding topography, sparse population density, long physical distances, and travel challenges resulting from Alaska's limited road system all may place barriers between first responders and those needing their aid. In such circumstances, it is vital to ensure that 9-1-1 outages do not further lengthen response times. Indeed, during the storms discussed above, ACS suffered no significant outages to its 9-1-1 services.

Based on its experience, however, ACS cautions the Commission not to enact rules based on too narrow a view of 9-1-1 reliability issues. ACS is concerned that the Notice reflects too great a focus on a small subset of specific 9-1-1 operational challenges affecting service providers that presented themselves during a specific storm that struck the Washington, D.C. area. To best ensure 9-1-1 reliability, however, the Commission should broaden its focus to include a full evaluation of the interdependent roles and responsibilities of Public Safety Answering Points ("PSAPs"), other local governmental entities, service providers, and 9-1-1 consumers. Only with such a holistic view may the Commission accurately identify the best way for new compliance rules, if any, to contribute to the overall reliability and resilience of 9-1-1 facilities and service.

Discussion

A. Burdensome New Commission Compliance Regulations Are Not Needed

In the Notice, at ¶ 19, the Commission seeks comment on "the extent to which 9-1-1 failures during the derecho reflect the reliability of 9-1-1 networks nationwide." ACS believe that the failures cited by the Bureau in its Derecho Report are unlikely to reflect systemic

[4] Casey Grove and Mike Dunham, "Unseasonable Windstorm Ravages Anchorage," Anchorage Daily News (Sept. 5, 2012), available at: http://www.adn.com/2012/09/05/2612953/high-winds-ravage-anchorage.html; Mike Dunham, "More Storms Headed Toward Anchorage, Anchorage Daily News (Sept. 17, 2012), available at: http://www.adn.com/2012/09/17/2628466/more-storms-headed-toward-anchorage.html.

shortcomings, and instead appear to reflect the cumulative consequences, albeit substantial, of a series of isolated equipment failures and procedural missteps. It is in every service provider's interest to ensure that its 9-1-1 services are as resilient as possible, and that it implements industry best practices to the extent that its network capabilities make possible. As discussed above, Alaska regularly experiences storms with intensity equal to or greater than that of the June 2012 derecho, and ACS's 9-1-1 services by and large remain fully operational.

To achieve this result, ACS collaborates closely with its PSAP customers to discuss how ACS services may best meet their needs. Alaska's sparse population density means that there are a relatively small number of PSAPs in Alaska, streamlining this process and enabling ACS to provide greater one-on-one interaction with PSAP representatives. With respect to the Commission's questions regarding whether "relevant industry standards are followed routinely" Notice at ¶ 21, however, ACS cautions that it is not always possible to follow every industry best practice in remote areas such as the Alaska bush. For example, the Commission highlights Communications Security, Reliability and Interoperability Council "CSRIC" Best Practice 8-7-0532, requiring network operators to "periodically audit the physical and logical diversity called for by network design and take appropriate measures as needed." In the Alaska bush, where there may not be a PSAP covering 150 or more communities, physical route diversity may not be possible, because there may be only a single facility or route serving a given bush location. Moreover, route diversity may be purely in the control of PSAPs, and the costs of service they are willing to incur.

B. The Commission Should Broaden its View to Include PSAPs, Consumers, and Other Parties that Contribute to the Effectiveness and Reliability of 9-1-1 Services

In the Notice, at ¶ 23, the Commission seeks comment on the entities that should be subject to the Commission's 9-1-1 reliability proposals. The Commission proposes to apply new compliance rules to each "9-1-1 service provider," tentatively defined to "include all entities, including ILECs, that provide 9-1-1 call routing, ALI, emergency services Internet protocol networks (ESInets), and similar services directly to a PSAP," *id.*

ACS believes that this definition is too narrow. To best identify the ways, if any, in which regulatory intervention may contribute the Commission should start by broadening its recognition that the term "9-1-1 service provider" to encompass these entities collectively. Successful delivery of 9-1-1 service requires the effective collaboration of network providers, PSAPs, and first responders. In significant ways, the level of reliability and resiliency of 9-1-1 services is outside the control of the network provider altogether.

For example, the Derecho Report, at 32, indicates that, despite a failure of backup power at the Arlington County, Virginia central office, and the complete loss of 9-1-1 service in surrounding jurisdictions served by the same provider, and the Arlington County PSAP "never lost service completely." As the Derecho Report, at 31-32, makes clear, the Arlington County PSAP engineered this superior outcome for itself because:

> The design of the Arlington County PSAP was based on state-of-the-art concepts, including redundant access "from two different exchanges, for purposes of diverse routing, to ensure 9-1-1 service even if one access route were severed or otherwise failed." . . . The Arlington County PSAP is served by redundant selective routers and has four ALI links to redundant ALI servers. During the derecho, both links to one ALI server and one of the links to the other failed."

The decisions and funding commitments necessary to achieve this level of redundancy and service resiliency are wholly within the province of the PSAP and its associated local

governmental budgeting process. The network provider can only deliver the services that the PSAP orders and for which it is willing to pay. But, in a disaster, the benefits are clear. During the derecho, PSAPs serving many surrounding jurisdictions, including the much more populous Fairfax and Prince William counties, suffered complete 9-1-1 outages, due at least in part to the fact that they had not designed their network access to provide the level of robustness and resiliency chosen by Arlington County.

The Derecho Report leaves all but unexplored the question of *why* the Arlington County PSAP retained service when so many surrounding PSAPs lost theirs. It includes only two specific "Recommendations for PSAP Action," including (1) to obtain "several different means of communication, such as mobile phones from different providers"; and (2) to have "multiple means of backup power, such as multiple generators."[5] Neither recommendation touches on the benefits to PSAPs of working with network providers to purchase diverse and redundant services, where available. Thus, the Derecho Report all but misses the critical significance of its findings regarding Arlington County. Even with extensive readiness planning, it is impossible for a network provider entirely to prevent network outages, particularly during a disaster when 9−1−1 service is most critically needed. PSAPs can and must also help themselves by ordering redundant services that help them survive a worst-case scenario.

Indeed, CSRIC has recently recognized the interdependence of network providers, PSAPs, and consumers in ensuring effective and reliable 9-1-1 services. In its most recent incarnation, CSRIC III appointed a working group to undertake the "challenge of creating two new best

[5] Derecho Report at 40-41. The Derecho Report's third "Recommendation for PSAP Action" discusses a rule change that requires providers suffering an outage affecting facilities that potentially affect a PSAP to notify the PSAP as soon as possible, but mentions no specific recommendation for any action to be taken by a PSAP.

practice data sets to address and capture the experiences of Public Safety organizations and to provide consumers a standard set of recommendations on how to properly use 9-1-1 during critical times."[6] Growing from this effort, the Final Report of CSRIC Working Group 8 recommends 118 new best practices applicable to PSAPs and 65 new best practices applicable to consumers.[7] Among these best practices are that PSAPs should "consider the use of divergent routes (*e.g.*, an office across the street that may be fed from a different cable or transformer) which is best accomplished through discussions with telecommunications service providers,"[8] and "consider obtaining interoffice diversity from its provider even in cases where end-to-end diversity is not available (e.g., there is only one loop route to the PSAP)."[9] ACS agrees that these are important steps that increase the reliability of 9-1-1 services but, even where the necessary facilities are available, the decision whether to purchase this level of redundant service lies with the PSAP.

C. Any Additional Commission Compliance Rules Should Allow for Flexibility to Adapt to Local and Regional Conditions

In the Notice, at ¶ 24, the Commission seeks comment on four different approaches for implementing recommendations for Commission action contained in the Derecho Report. These four approaches include one based on increased reporting by network providers of "the extent to which they are voluntarily implementing critical best practices, or complying with applicable standards established by the Commission," Notice at ¶ 26; one based on mandatory periodic certification by network providers "that their 9-1-1 service and facilities comply with voluntary industry best practices, reliability requirements specified by the Commission or other standards," Notice at ¶ 28; one that would have the Commission "specify minimum standards for 9-1-1

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6 CSRIC III, E9-1-1 Best Practices, Final Report – Part 1 (Working Group 8, June 2012), at 7.

7 CSRIC III, E9-1-1 Best Practices, Final Report – Part 2 (Working Group 8, March 2013), at 20.

8 *Id.* at 90 (Best Practice WG8-3-82).

9 *Id.* at 90 (Best Practice WG8-3-83).

communications reliability, based on recognized industry best practices," Notice at ¶ 30; and one that would have the Commission "conduct periodic compliance reviews or site inspections of service provider facilities to verify that 9-1-1 service providers are adhering to certain standards," Notice at ¶ 31.

Above all, ACS cautions the Commission against creating rules in this area that mandate compliance with specific minimum service requirements. As it is in so many other ways, Alaska is different with regard to the delivery of 9-1-1 service. Alaska has relatively few PSAPs, some of which are located in remote areas served by few telecommunications facilities. While ACS routinely complies with industry best practices throughout much of its network, it is not always possible to comply with every standard in areas of the Alaska bush. For example, it is impossible for ACS to provision physically diverse routing to a PSAP if only a single route exists with facilities to serve a particular bush location.

Recognizing that such flexibility is necessary, the CSRIC Working Group recommendations themselves indicate that, "industry Best Practices are voluntary in nature and may not apply to all Service Providers due to scope, cost, feasibility, or resource limitations. Best Practices should be used by experts who have the overall experience to interpret the Best Practice in the manner in which it was intended."[10] The industry best practices identified by CSRIC, like organizational practices and procedures in other fields, must be evaluated and implemented by individual service providers within the context of the specific needs and resources available to serve specific PSAPs.

For this reason, the Commission's proposal to require periodic compliance certifications from service providers is flawed. *First*, by doing so, the Commission would stifle the ongoing

[10] CSRIC III, E9-1-1 Best Practices, Final Report – Part 1 (Working Group 8, June 2012), at 6.

process of identifying and refining industry best practices. These standards in question were conceived as "voluntary." A requirement to certify compliance would transform them into a large and dynamic body of regulations with the force of law, and add significant gravity to the decision whether to add, subtract, or refine individual elements as network capabilities continue to evolve.

Second, as discussed above, the industry best practices in question were not developed with the intent that they would have universal applicability. Rather, CSRIC fully acknowledges that individual service providers will need to evaluate the extent to which individual standards can be implemented in their respective networks. Mandating strict compliance with best practices that do not make sense or otherwise would better be adapted to local conditions could result in wasteful spending on counterproductive measures or, indeed, potentially undermine 9-1-1 reliability by precluding superior options.

Third, at least as it is articulated in the Notice, service providers would have great difficulty understanding what the certification requires. Reflecting service providers' need for flexibility, many critical best practices are articulated as points for consideration, such as "Network Operators and Service Providers should consider tertiary carrier/transport methods such as satellite, microwave or wireless to further reduce point of failures or as 'hot transport backup facilities.'"[11] To certify compliance, would a service provider need to have tertiary transport methods in place, or would it only need to certify that it had "considered" them? Furthermore, although the Notice, at ¶ 28, proposes to include in the certification "reliability requirements specified by the Commission or other standards," there is no discussion or

[11] CSRIC Best Practice 8-7-1050 (available at: https://www.fcc.gov/nors/outage/bestpractice/DetailedBestPractice.cfm?number=8-7-1050).

definition of what those requirements or "other standards" would be. It would be impossible, and would certainly not serve the Commission's overarching purposes to increase 9-1-1 reliability, for service providers to certify compliance with undefined standards.

The Commission's proposals either to "specify minimum standards for 9-1-1 communications reliability, based on recognized industry best practices," Notice at ¶ 30; or to "conduct periodic compliance reviews or site inspections of service provider facilities to verify that 9-1-1 service providers are adhering to certain standards," Notice at ¶ 31, suffer from similar flaws. The Commission's proposal to enshrine voluntary industry best practices in Commission rules could ultimately harm 9-1-1 reliability by introducing considerable delay in the process of updating and revising these best practices, while also requiring service providers to comply with requirements that may become increasingly out-of-date. Similarly, "periodic compliance reviews," otherwise known as audits, will be effective only if there are clear standards against which to audit.

Even the Commission's proposal to require periodic reporting would constrain service provider efforts to ensure reliability of 9-1-1 service and could create additional harms. Particularly for small providers, such as ACS, the regulatory burden of preparing and filing yet another Commission report is costly. Furthermore, especially given that many of the critical industry best practices are articulated as considerations, any service provider report of the extent to which it is in compliance would likely involve significant narrative description and qualification of the service provider's efforts. Such significant disclosure of the design and implementation process for 9-1-1 capability itself could introduce security threats.

D. Implementation of the Bureau's Recommendations to Improve 9-1-1 Network Reliability Should Permit Local Variations

In the Notice, the Commission seeks comment on implementation of Bureau recommendations for new Commission rules regarding (1) auditing of the physical and logical diversity of 9-1-1 networks, Notice at ¶ 34; (2) sufficiency of backup power at central offices, Notice at ¶ 44; (3) robustness of network monitoring capabilities, including diverse monitor and control links and capabilities throughout the service provider's network, Notice at ¶¶ 59-60; and (4) increased PSAP notification requirements, Notice at ¶ 67. While ACS agrees that each of these four areas is important to the overall delivery of reliable 9-1-1 service, it is also critical for the Commission to understand that it may not be possible for ACS to comply with each of these requirements at every location in ACS's network.

ACS takes great care to deliver the best and most reliable services, including 9-1-1 services, to all of its customers throughout its network. Nevertheless, in some locations in the Alaska bush, it may not be possible to achieve full route diversity. Many areas served by ACS are connected through satellite or microwave transport to ACS's network facilities in Anchorage and points beyond, as well as ACS's redundant network operations centers located in Anchorage and in the lower 48 states. Thus, while circuit auditing may reveal the extent to which physically diverse routing is (or is not) available, ACS may have sharply limited ability to increase its diversity in light of the limited facilities available.

Backup power facilities are a critical component of ACS's network. Reliable commercial power is unavailable in many areas of Alaska that ACS serves, and ACS therefore maintains significant backup power capabilities, both in Anchorage and throughout the state. ACS maintains generators at critical locations throughout the state, as well as its own, on-site fueling

station that it can use to supply and resupply the necessary fuel to keep these generators operating. In addition, many ACS central offices have battery backup facilities that offer an additional source of emergency power, should it be needed.

Because of the relatively small number of PSAPs that ACS serves, ACS is well positioned in the event of an outage to notify them of the issue and work with them to restore service as quickly as possible. Indeed, ACS prioritizes such work, understanding the importance of reliable 9-1-1 services, particularly in times of widespread emergency.

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For the foregoing reasons, ACS hereby requests that the Commission examine 9-1-1 reliability from a holistic perspective before imposing burdensome new regulations on 9-1-1 network providers, recognize that many reliability issues rest on decisions that are controlled by PSAPs, and ensure that any new service provider compliance rules in this area include clearly articulated obligations and allow service providers flexibility necessary to reflect local and regional network capabilities.

Respectfully submitted,

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